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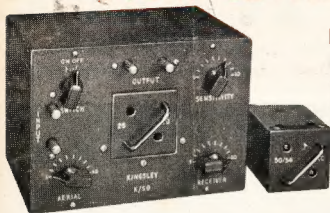


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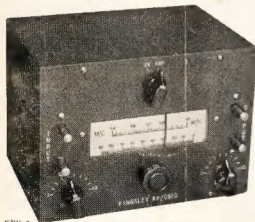
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— IN THIS ISSUE —

100 Watts from Class B 807s	3
Hams to the Rescue	6
Questions and Answers ..	9
Technical Tidbit, A	9
Contest News	10
Federal, QSL and Divisional Notes	12
Fifty and Up	20
Franklin Series Phased Array ..	20

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EDITORIAL



The history of the communication of information from one person to another has often been reviewed and the various stages from smoke signal to the radio flash have filled us with wonderment and admiration for the ingenuity of man. The smoke signal was purely an amateur affair and coded puffs made communication an easy accomplishment within visual range. This primitive system has long been abandoned progressively giving way to telegraphy, telephony, and finally radio communication. Yes, the countryman has long since abandoned the smoke puff in favour of the Type 3 Mark 2 now so capably handled by the licenced Amateur in the service of his fellow men in times of difficulty.

From our knowledge of this world there will never be a surfeit of reliable information, and at no time is this more necessary

than when human lives are in danger. Elsewhere in this issue is the record of a splendid Amateur achievement concerned with the speedy location of a child lost in the bush, and the enterprise of the Amateur in times of emergency as evidenced in the recent disastrous floods on the North Coast of New South Wales.

These contingencies will occur countless times in the future involving young and old, and there will be many opportunities awaiting the Amateur for fine service. It is our sincere hope that our allocation of emergency network frequencies will long remain as our avenue for the humane assistance we so gladly offer. This is a controlled and skilled assistance that never sleeps, and merits the warm appreciation it is now receiving in official quarters.

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100 WATTS FROM CLASS B 807s

It is one of the duties of the Technical Editor to scan all overseas publications coming to the W.L.A., with the object of reproducing any technical matter which would be of interest to readers of "Amateur Radio."

With this view in mind a new circuit for using our popular 807s in Class B is presented. The theoretical details of the circuit are reprinted from R.C.A. "Ham Tips," and a practical Speech Amplifier and Modulator, using the new circuit, from the English "Short Wave" magazine, February, 1948.

During the intervening years since its development by R.C.A. back in 1936, the 807 has become the Amateurs' number one favourite r.f. transmitting tube.

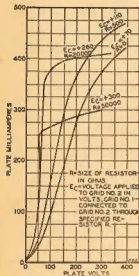


Fig. 1.—Effect of the resistor in the No. 1 grid circuit upon E_p versus I_p characteristics.

However, comparatively little use has been made of its excellent class AB₁ characteristics in a.f. modulator service, perhaps because of the difficulties encountered in providing the required regulation of control-grid and screen-grid voltages.

In order to avoid these difficulties, the possibility of using this tube as a zero-bias triode in Class B audio service was intriguing. Its low price, its small size, and its ability to deliver a great deal of power at low plate voltage provided the impetus for a series of experiments.

The first idea was to tie the control grid and the screen grid together in a manner similar to the way the old type 46 was operated in zero-bias Class B service. This produced a low-pervance triode with a plate family of curves that looked like the receding hair line of the Java Ape Man. It would be no brain wave to operate on such a plate family either, for distortion is high and the efficiency low.

Another idea was to ground the control grids and put the driving signal on the screen grids at zero bias. The arrangement produced a good plate family, but required excessive driving voltage for satisfactory power output. Several other schemes were tested with varying results—and then it happened!

One hundred and twenty watts of audio—with less than 8 watts of driving power—at only 750 plate volts. What's more, it's very simple. Just connect the cathodes to ground, put the driver transformer between the screen grids, and ground the centre tap. Then, connect the control grid of each tube to its screen grid through a 20,000 ohm resistor. That's all there is to it.

During the development of this circuit, plate families were taken with various values of resistance between the No. 2 grid and the No. 1 grid. The series of curves shown in Fig. 1 illustrate the effect of the resistance in the No. 1 grid circuit upon the shape of the diode line. The driving voltage designated E_c is that which is applied direct-

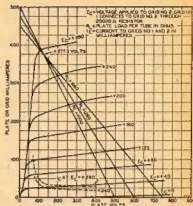


Fig. 2.—The 807 plate family with a 20,000 ohm resistor in the No. 1 grid circuit.

ly to the No. 2 grid. Low values of resistance give poor knees, but as the resistance is increased, the knees improve, until the optimum condition is reached at about 20,000 ohms.

With this value, it can be seen from Fig. 2 that a satisfactory plate family is produced. Grid current curves for the new zero bias connection are shown as dotted lines, and plate load lines are shown for three operating voltages. With a 750 volt supply, a plate-to-plate load of 6,600 ohms, and a driving source giving 555 peak volts grid-to-grid, 120 watts of audio are available. The power to drive the grids is greater than that needed for Class AB₁, but this is no hardship because a push-pull triode driver will easily furnish the 5.3 watts needed. Fig. 3 shows the circuit for driver and output stages used in the tests.

The only important technical difference between zero bias 807s and regular zero bias Class B triodes is in the values of positive grid impedance. Whereas

OPERATING DATA FOR 807s IN CLASS B

Plate Supply Voltage ...	750	600	500 volts
Peak A.F. Grid-to-Grid Voltage	555	555	555 volts
Grid Driving Power	5.3	5.3	5.3 watts
Grid Imped. per Valve	7100	7100	7100 ohms
Grid Bias	Nil	Nil	Nil
Plate-to-Plate Load	6650	5050	4000 ohms
Anode Current (2 valves)			
No Signal	12	10	8 Ma.
Max. Signal	240	240	240 Ma.
Audio Output (approx.)	120	90	72 watts

Fig. 3 (at the right)

T1—Input audio transformer.

T2—Flament transformer.

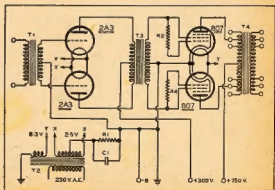
T3—Driver transformer.

T4—Modulation transformer.

R1—750 ohms, 10 watts, wire wound.

R2, R4—20,000 ohms, 1 watt, carbon.

C1—16 or 20 uF, 100 volt, electrolytic.



most of the high- μ zero bias triodes require low-voltage high-current driving signals, the 807s take excitation at high voltage but low current.

Computations for driver tubes and transformer ratios for the new method of operations are not difficult to make. The 807s present to the driver a fairly constant load applied continuously, so the computations are just a matter of matching impedances. First, it is necessary to select the driver tubes and establish a set of conditions for them that will provide at least 20 per cent. more output than that required to drive the modulator tubes. For example, use a pair of 2A3s, which will give 10 watts with a plate-to-plate load of 5,000 ohms. The equivalent grid resistance of an 807 operated Class B is 7,100 ohms, so the driver transformer impedance ratio will be about a 1 to 1.4 step-up between total primary and one-half secondary (Impedance ratio = 7,100 divided by

5,000). This is equivalent to a turns ratio of 1 to approximately 1.2, because the turns ratio is equal to the square root of the impedance ratio ($1.18 =$ the square root 1.4).

If your driver transformer doesn't have the required turns ratio in the forward direction, it may be correct when reversed, i.e., with the primary used as the secondary. If this expedient does not work, it will be necessary to get a new driver transformer or a matching transformer to work in conjunction with the one you have. If you use a public address amplifier for a driver, one solution is to use a low-cost universal output transformer rated at 6 watts or more as a matching transformer. With its primary connected to the grids of the push-pull 807s, its secondary (used as a primary) will match a wide range of output impedances such as are common to most p.a. amplifiers.

Whilst the device is in no sense a depth of modulation indicator, it does serve as an indicator of the level of speech input, and has been found extremely useful in practice. It indicates, for instance, how much background noise is getting on to the carrier, and shows readily whether the operator is speaking the correct distance from the microphone.

MODULATOR CONSTRUCTION

There is little to say regarding construction of the 807 modulator. In the writer's case, speech amplifier and modulator are separate units, the 807 driver transformer being placed on the modulator chassis, and a short length of screened cable connects the output of the 6L6 with the driver transformer primary. With this arrangement the speech amplifier can be placed on the operating desk with all controls at one's finger tips, and no noticeable distortion results even when the length of connecting cable is 10 feet. Another advantage is that the chances of r.f. feedback are minimised when the speech amplifier is placed at a distance from the r.f. stages.

THE DRIVER TRANSFORMER

A driver transformer having a Step-up ratio is required for the modulator, correct ratio being easily calculated if the optimum load for the driver valve or valves is known, the required turns

Practical Design for Speech Amplifier

Using the preceding data as a basis, a straight-forward three stage speech amplifier was built up, and as can be seen from the circuit diagram (Fig. 4), it is quite conventional and free from frills. A "speech level indicator" was incorporated in the amplifier, for reasons explained later, and uses a magic-eye valve and double-diode triode amplifier. This feature can be omitted from the speech amplifier without any detriment to performance.

The first valve, a 6J7, is a normal high gain voltage amplifier with provision for crystal microphone input—resistance capacity coupled to a 6J5 which drives a 6L6 in Class A as a modulator driver. As mentioned previously, the load presented to the driver stage is more or less constant in this circuit, and it has been found that a 6L6 connected as a tetrode, with 350 to 400 volts on the plate, will drive the 807s to approximately 100 watts output, with negligible distortion on speech input.

With the voltages indicated, and correct matching to the 807 grids, the 6L6 can be driven to give an output of 6 watts, which will be ample to obtain up to 100 watts from the 807s.

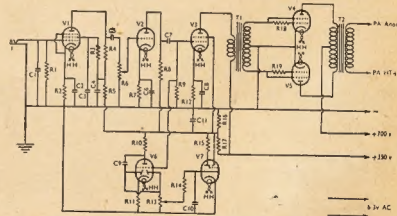
SPEECH LEVEL INDICATOR

It was decided to make use of the magic eye on the panel as a speech level indicator.

Audio voltage is taken from the 6L6 grid to the grid of a double-diode triode, the diodes of which are connected together. The amplified audio is then rectified by the diodes, the exciting voltage for the magic-eye assembly being developed across a 1 megohm variable resistor R13 which forms a sensitivity control.

Thus on speaking into the microphone the magic-eye will close to an extent dependent upon the distance of the speaker from the microphone, the setting of R13, and the setting of the audio gain control R6.

In practice, after speech amplifier and modulator are connected to the transmitter, the sensitivity control is set so that when 100 per cent. modulation is taking place, the magic-eye just closes.



ratio being the square root of the ratio of driver load impedance to the grid impedance of the 807s. With the Class A 6L6 used as shown, with cathode bias, 300 volts on the screen, requiring a load of 4,500 ohms to realise the full output of 6.5 watts. This latter figure is taken from the published characteristics, and does not, of course, take into account transformer and other losses. In choosing a driver valve or valves these losses should be borne in mind, and it is as well to budget for a driver stage which will deliver 15 or 20 per cent. more audio than is theoretically required for any given output.

A driver transformer is thus required which will match a 4,500 ohm impedance into 14,000 ohms. The impedance ratio of the transformer will therefore have to be 1:3.2, making the required turns ratio 1:1.8, i.e. the square root of the impedance ratio. A normal Class B transformer will serve the purpose with primary and secondary reversed, assuming the transformer has a centre tapped primary.

Such transformers seem difficult to come by, as the usual driver transformer for Class B and AB₂ amplifiers, although having a step-down from primary to secondary, invariably has an untapped primary. If any difficulty is experienced in obtaining a transformer of the correct step-up ratio, two 5 or 6 watt universal output transformers offer an alternative arrangement; the low impedance winding of one, carrying the output of the driver valve, being connected to the low impedance winding

on the other transformer, the secondary of which is connected between the 807 screens.

By experimenting with the adjustable primary taps, it will thus be possible to arrive at a correct match between the driver and modulator.

The writer was fortunate to obtain a 1:2 step-up transformer from a piece of ex-service equipment. It originally functioned as a modulation transformer matching a pair of 12A6s into an 832, and worked perfectly as a driver transformer when using the 6L6 driver, despite the small discrepancy ratio. (Sounds like a 522 modulation transformer—Ed.)

As a matter of interest the writer has driven the 807s in Class B using a 6F6 driver, with 290 volts on the plate, preceded by a 6J7 and 6C5, and a crystal microphone. With this set-up an 80 watt carrier was modulated 100 per cent. with the audio gain one-third advanced. The driver transformer used to match the 6F6 into the 807 grids was a 1:1.4 step-up. The anode voltage on the modulator was 700 volts, the same transformer being used to supply h.t. to the Class C r.f. stage. Conditions of operation in this case were not at all favourable as the regulation of the power supply was none too good, and yet reports received indicated that the speech quality was really excellent, there being no trace of distortion.

One or two stations have been heard on the air complaining that they have been unable to obtain the expected output from the Class B 807s, but in

every case it has been evident that the wrong conditions were the cause of the failure.

Once the simple principles of matching the driver stage to the modulator grids have been grasped, and the correct step-up ratio of the driver transformer has been obtained, the audio output is limited only by the 807 plate voltage and the amount of voltage swing obtainable at the grids.

If the modulator has been converted from the usual Class AB₂ 807 circuit it should be borne in mind that whilst the required driving power for AB₂ operation is 0.2 watts, at least 5.3 watts audio will be required to obtain the full audio output from the 807s in Class B.

OPERATING DATA WITH LOWER PLATE VOLTAGES

Perhaps the constructor has a 500 or 600 volt transformer which he would prefer to use with the 807 modulator. A power supply incorporating such a transformer will enable the 807s to deliver an output of from 70 to 80 watts.

A set of operating conditions is therefore appended for plate voltages of 500 and 600. As the average plate current in each case works out at about 240 Ma., the secondaries should be rated for at least 300 Ma. working current, otherwise, apart from the risk of a burnt out secondary, the voltage regulation will be inadequate to cope with the large plate current swing.

It should be noted that for each set of operating conditions, grid driver requirements remain the same, in order that maximum audio output may be obtained for each plate voltage figure:

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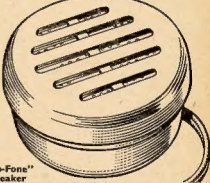
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HAMS TO THE RESCUE !

RADIO AMATEURS HELP SEARCH FOR BABY

Four Amateur Radio Operators in Gippsland and North Essendon (Vic.) guided a search party of nearly 500 farmers and police in their hunt for a baby boy who was lost all night in the bush, several miles from Maffra on 9th July.

The baby was Peter Daly, aged 2, who strayed from a truck while his father was cutting timber in rugged country cut by gorges sometimes 200 feet deep.

Early on Saturday morning the Maffra police, who had been hampered by lack of communication between the search parties, enlisted the aid of the W.I.A. Emergency Network—Eastern Division.

Keith Scott (VK3SS), Jim Long (VK3AJL), and Ossie Kellas (VK3AHK) arranged a net as follows: 3AHK base station at Tinamba with landline communication with Maffra Police Station, 3SS and 3AJL portable. This arrangement rendered communications between the two search parties and Maffra Police via 3AHK.

With this efficient set-up the Police in the bush search party soon realised that more speedy communications with Russell Street (D24) were necessary and would be obtained if a station in Melbourne could be contacted to work direct with 3SS.

3AHK put out a "CQ Melbourne Urgent" call and Mr. Ellis Pottage (VK3JP) made contact and passed on a message to Reg Busch (VK3LS) to take the Melbourne end on the Emergency Frequency of 6984 Kc.

With this arrangement messages between the field search parties and D24 were handled in a matter of seconds until the search was successfully concluded.

It might be pointed out that D24 readily accepted the communication facilities and passed their regards for the assistance given by Amateur Radio.

For those interested in portable work in general, and emergency communications in particular, a description of the equipment used is as follows:—

VK3SS.—Portable with search party No. 1 used a Type 3 Mark 2 Transceiver, cathode modulated with 6V6 audio amplifier; antenna a single wire attached to nearby tree. This station was situated in dense bush.

VK3AJL.—Base station using Type 3 Mark 2, cathode modulated; later transferred to field party No. 2 using a 108 Transceiver used as a Walkie Talkie with attached whip antenna.

VK3AHK.—Base station used a Type 3 Mark 2, cathode modulated. Single wire antenna.

VK3LS.—Home station, 6V6 crystal oscillator, 807 p.a., plate modulated with p.p. 6V6s, antenna half-wave horizontal.

AMATEURS AGAIN ASSIST IN NORTH COAST FLOODS

Several of the North Coast (N.S.W.) Amateurs did some fine emergency work during the devastating floods that swept the area during mid-June. With little warning Amateurs found themselves in a position where they could serve the community by supplying emergency communication.

An outstanding effort was that of Norm Carpenter (VK2RK), of Murrumbidgee. On 14th June, while the cyclone was at its height, it appeared as if the local broadcast station would lose its aerial system or the power system would fail. In view of this happening, VK2RK arranged announcements to be made over the broadcast station to the effect that VK2RK would broadcast on 7 Mc. in the event of any failure. The inevitable happened, the power failed and VK2RK opened up on 7010 Kc. and for four hours broadcast flood bulletins supplied by the local flood committee. These were made at 10 minute intervals.

The transmitter was run from a battery p.a. system used as a modulator, a local radio dealer coming to 2RK's assistance for the latter. Congratulations to Norm on a job well done.

Down in Maclean VK2OE was requested to stand-by by the local postmaster in case of emergency, which fortunately did not eventuate.

VK2GI, at Woodford Leigh on the Clarence, was without power for days. The diode monitor was converted to receive the local broadcast station and the flood warnings.

On the lighter side—2LH found motor cars and refrigerators in his property. 2NY had the doubtful honor of seeing his QSL cards floating in five feet of water in his shack. 2XO's gear was rapidly stored in the garage roof.

Actual damage to equipment was small and from all accounts radio gear had a high priority in removals—sometimes ahead of furniture.

All the North Coast gang stood by for hours to see if they could be of any assistance.

Peter Alexander (VK2PA), North Coast Zone Officer, who supplied the above news, also reports that a very strong move is under way to organise a battery operated net to come into operation in any future emergencies.

MELBOURNE EMERGENCY NETWORK

It is proposed to develop a Melbourne Emergency Network which will be capable of rendering assistance within a radius of approximately 50 miles of Melbourne.

If you are interested write immediately to the Divisional Officer of Emergency Communications, Law Court Chambers, 191 Queen Street, Melbourne, giving the following particulars:—

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QUESTIONS AND ANSWERS

Our thanks to all who have sent in answers, or who have located people with the answers. You are doing a good job, thanks a lot. In common with other magazine correspondence, the address of this column is now "A. and A., "Amateur Radio," Law Court Chambers, 191 Queen Street, Melbourne, C.I.

A.1.—As you saw last month, VK3ASG came good just as we were going to press. Since then he has sent in more information as follows.

"Considering the purpose for which this line was originally designed, the velocity factors compare very favourably with some cables with solid and beaded insulation especially designed for r.f. work. Laboratory tests have shown Nyllex flex to work well as feeder—up to 50 Mc. I would be interested to hear the findings of anyone who has conducted tests with Nyllex on higher frequencies. Many are using Nyllex to feed 144 Mc. systems with success, including VKs 3HE, 3EL, 3TO and 3TC.

"Measured at 45 Mc. the velocity factors are:—

Colour	Velocity Factor
Blue	0.7
Black	0.69
Red	0.76
Brown	0.71
White	0.695
Yellow	0.658
Clear	0.7

"At this juncture I would like to extend my sincere thanks to Mr. T. L. Martin, of Moulded Products Ltd., for his interest in having this information collated. Mr. Martin advises, in response to enquiries, that the sole distributors of Nyllex Cables are A.P.I. Cables and Insulation Pty. Ltd., Melbourne."

A.3.—This seems to have the boys tricked. 3VZ, the Technical Editor, politely declined to comment. When the question was raised in other quarters the standard answer was "It all depends;" but as to what it all depends on was rather obscured in the resulting argument.

So your scribe suggests that the quickest way to find out is to measure the impedance.

A TECHNICAL TIDBIT

That new final of yours has just been completed, and you anxiously throw the high voltage on, and dip the final plate current to resonance. Then you couple in the antenna, again dip to minimum plate current, and finally make sure that you have maximum radiation from the antenna by checking with a neon bulb on the antenna, by again retuning the final plate condenser. In this simple operation you have passed over several points which will inform you as to how the final and the feeder system is working.

When final plate current is dipped to a minimum value with no load on the

The simplest way of doing same would seem to be to set the 807 going with normal plate voltage and drive, then to measure the screen current as the screen voltage is varied, say in 25 volt steps from the initial 150 volts. This should be taken far enough to include the full voltage swing of the screen on full modulation. If the screen current is graphed against screen voltage, then the tangent to the graph at 150 v. is the a.c. screen impedance. Also it will be obvious as to how constant this impedance is over the voltage swing. This process is really the same as measuring the plate resistance of a valve except the screen resistance is wanted here.

A.4.—From VK4FM, VK3FW, VK2CS and C. B. Fisher we have this information on the 280/80. It is really four voltage regulators in one, having four anodes and a common cathode.

Socket: 5-pin English

Other designations: VS69 or CV1069.

Pin	Connections:	Voltage	Regulation
1	Anode 4 ...	+282	5%
2	Cathode ...	0	
3	Anode 2 ...	+143	10%
4	Anode 3 ...	+205	7%
5	Anode 1 ...	+73	15%

Each anode has a maximum current rating of 40 Ma. and the cathode current, which is the sum of all the anode currents, must not be greater than 80 Ma. Unused anodes should not be left floating but connected by 100,000 ohm resistors either to earth or to B+, the anodes of higher voltage than the ones used being taken to B+ and those of lower voltage to earth. The striking voltage is 363 volts.

A similar tube is the 280/40 which has the same socket connections and operating voltage, but each maximum anode current is 30 Ma. and maximum cathode current is 60 Ma.

NEW QUESTION

Q.5.—A lot of disposals v.h.f. gear is described as operating on such and such a band. Can anyone supply the frequencies corresponding to G., L, L. and P. bands? Also, for interest, any other band frequencies you know.

settings will be the same, but the fact that they are the same does not necessarily imply that the line is flat. It will be necessary to check the line by other methods to guarantee the absence of standing waves.

The next thing to examine is how the condenser setting changes when going from minimum loaded plate current to maximum power output. That is, check the condenser setting when you have minimum plate current and the final is loaded. Next, check the antenna output by means of a field-strength meter and tune the plate condenser until the final is putting out the maximum power as indicated by the field-strength meter. If these points coincide, the final tank circuit has a proper loaded Q. However, if these two tests do not give the same condenser setting the Q is not right in the final tank circuit. To correct this add more C across the final coil.

Maximum power output and minimum loaded plate current depend upon the power factor and the impedance in the final tank circuit. Zero power factor and maximum impedance occur together only in high Q circuits (a Q of 12-15). If you have too low a Q you must operate with either one condition or the other, that is, with minimum loaded plate current, which does not give maximum power output, or with maximum power output which will not give the lowest possible plate current.

If you operate with minimum loaded plate current, you effectively lose power output due to poor load circuit efficiency. If you operate at maximum power output the tube efficiency is low and it is not possible to obtain full use of the tubes. Obviously, therefore, it is desirable to operate so that minimum loaded plate current and maximum power output occur at the same setting of the final tank condenser. Another reason to make sure that you have a high Q tank is that harmonic radiation is aggravated in a low Q tank circuit.

One thing occurs most often on the lower frequencies, and is a simple matter to remedy. Add capacitance across the final tank coil, removing turns from the coil as you go, until you have sufficient capacity to make the two points mentioned above coincide.

Too high a value of C will cause high circulating current in the tank coil, but this will not occur unless you add a great deal more capacity than is needed to get a high Q tank.

Once you have the minimum loaded plate current and maximum power output fixed, these two points will be inseparable, regardless of your feeder system. However, these two points, which are now coinciding, may not coincide with the unloaded minimum plate current point. However, all three points will be the same when you have a flat line, and the first two points will differ from the unloaded minimum plate current point when you have standing waves. The same precaution still holds if all three points coincide. This does not guarantee that the line is flat and separate tests must be made to verify that point.—"Ham News," April, 1948.

CONTEST NEWS

REMEMBRANCE DAY CONTEST 1948

The Remembrance Day Contest is to be an Annual Contest to perpetuate the memory of those Australian Amateurs who gave their lives for their country during World War II. It is to be held during the week-end nearest to the 15th August in each year—the date on which hostilities ceased in the South West Pacific Area.

A handsome Perpetual Trophy will be awarded annually for competition between States, and will be inscribed with the names of those who gave their lives, so perpetuating their memory throughout Amateur Radio in Australia. The name of the winning State for each year will also be inscribed on the Trophy.

RULES

1. The contest will commence at 1800 hours E.A.S.T. on the 14th August and continue through until 1800 hours E.A.S.T. on the 15th August, 1948.
2. The Contest is open to all Australian Amateurs, but only members of the W.I.A. are eligible for the awards.
3. The Contest is an open contest—c.w., phone or a combination of both may be used.
4. The Contest is an Interstate Contest, and Amateurs in each State will endeavour to contact Amateurs in all other States.
5. A station may be operated by more than one operator provided that a separate log is entered for each operator under his own call sign.
6. All present amateur bands may be used, and all transmissions must conform with the regulations as laid down in the P.M.G.'s. "Handbook for Operators of Amateur Wireless Stations," January, 1948. Any breaches of these regulations will lead to the disqualification of the station concerned.
7. The arranging of schedules for contacts on other bands will not be permitted.
8. All stations entering the Contest will call "CQ RD" if using c.w. and "CQ Remembrance Day" if using phone.
9. A State competing for the Trophy must submit a minimum of six (6) logs from members before becoming eligible for contesting the Trophy.
10. Only one contact per station per band is permitted.
11. Each participant shall assign himself a three figure number. When more than one operator operates the same station each must assign himself a separate three figure number.
12. The exchange of serial numbers shall be the same as for the last DX Contest. The first three figures are those chosen in Rule 11 above and will be repeated by the station throughout the Contest; and the second three numbers will commence with 000 for the first contact and for subsequent con-

tacts will be the first three numbers of the station of the previous contact. A complete exchange of signal reports must also take place before any points may be claimed for the contact.

SCORING

13. In order that an equitable distribution of points for States with a large number of contest stations to a State with fewer contest stations may be determined, a sliding scale of points has been allotted as shown in the Table appended.

14. In addition to the points in the Table that may be scored, a bonus of 25 points may be added to the total score for each State worked on 50 Mc. or above.

LOGS

15. The log submitted must show in the following order: Date, Time (GMT), Station Worked, Band, Type of Emission, Signal Report Sent, Signal Report Received, Serial Sent, Serial Number Received, and the Points Claimed. A statement signed by the operator must be attached at the conclusion of the log, showing that the regulations (see Rule 6) and these Rules have been observed. Any logs departing from this form will be automatically disqualified.

16. All logs must be forwarded through the Contestant's Divisional Council, to reach Federal Executive, Box 2611W, G.P.O., Melbourne, on or before the 6th September, 1948.

AWARDS

17. Attractive certificates will be awarded to the First, Second, and Third Highest Stations in each State. There shall be no outright winner. Where a large number of logs are received from any one State, further awards may be made at the discretion of the Contest Committee.

18. The State to which the Perpetual Trophy is to be awarded shall be determined by the highest average score of the first highest six (6) logs (as mentioned in Rule 9) in each State.

19. The Trophy will be forwarded to the winning State in its container and will be held by that State for a period of 12 months until the winner for the following year is determined. Further details on the forwarding of the Trophy etc. will be given later.

20. The Contest Committee shall be the sole adjudicators, and their ruling shall be binding in the case of any dispute.

RESULTS OF 1948 TRANS-TASMAN CONTEST

Judging by the number of logs received, far fewer stations participated than was hoped, but those who did take part enjoyed it to the full. It was unfortunate that another contest was being conducted by the N.Z.A.R.T. and this coincided with the Trans-Tasman. The numbering system was not the same and did cause some confusion and this must emphasise the desirability of having a universal system of exchanging numbers. Then should two contests be run at the same time, only one set of numbers need be exchanged.

In addition to the list below, a couple of check logs were received.

AUSTRALIA

Open		
VK7AB	1728	Points
VK4XJ	504	"
VK3HG	480	"
C.W.		
VK2QL	1206	Points
VK3UM	510	"
VK3ZC	452	"
VK4FJ	72	"
VK4RC	72	"
VK3XB	36	"
Phone		
VK2CI	912	Points
VK3QK	27	"

NEW ZEALAND

Open		
ZL3HC	2204	Points
C.W.		
ZL1MB	1764	Points
ZL2BH	342	"
ZL1UK	144	"
Phone		
ZL3HC	519	Points
ZL4HJ	120	"

A fairly high-scoring log was received from VK2RA some time after the closing date and it is regretted that it could not be accepted.

HARMONICS

Heard on the broadcast band in W.A. recently. The announcer on a commercial broadcast station was concluding a daily request session for a repatriation hospital. The sign-off went something like this—

"Well, that's all for today, but we'll be back again tomorrow at the same time when we'll call Ward Number—let me see, what Ward do we call tomorrow" (fumbles among some papers on announcer's desk). "I think it's here —QXK a moment, will you!"

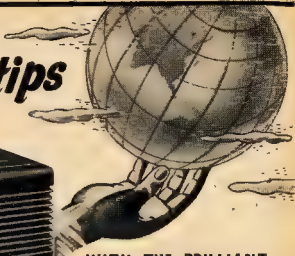
You're right! That announcer was a Ham—in fact it was VK6ND

TABLE

	TO								
	VK	VK2	VK3	VK4	VK5	VK6	VK7	VK9	Total
FROM	2	1	2	3	5	4	6	21	
	3	1	—	3	2	5	4	6	21
	4	1	2	—	3	6	5	4	21
	5	2	1	3	—	5	4	6	21
	6	1	2	4	3	—	5	6	21
	7	2	1	4	3	5	—	6	21
	9	1	2	3	4	5	6	—	21

NOTE.—Read the Table from Left to Right for points for the various States, e.g. a VK2 scores: 1 pt. for VK3 contact. 2 pts. for VK4 " etc. a VK6 scores 1 pt. for VK2 contact. 2 pts. for VK3 " etc. 4 pts. for VK4 " etc.

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2. Designed to operate from Standard AC Mains with inputs of 210 volts, 200/240 volts, 40/60 cycles as well as from a 6 volt battery by the use of a separate vibrator unit.
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4. TUNING RANGE—(1) 31 to 12.5 Mc/s. (2) 12.5 to 5 Mc/s (3) 5 to 1.7 Mc/s.
5. TUNING. An electric band-spread arrangement is used for this purpose. Fly-wheel control is utilised on the band-spread condenser drive. The scale is clearly marked with all amateur bands, and is so arranged to enable accurate re-setting to a spot frequency.
6. I.F. FREQUENCY—1500 Kc/s.
7. CRYSTAL FILTER is vacuum mounted to provide a high degree of stability. Phasing control and "in/out" switch are brought out to the front panel.
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 Fremantle
 GOK—C. M. Hayes, 26 Kumberley St. West
 Leederville
 EDW—A. W. Hawksworth, Lot 10, Butcher St.
 Bruce Rocks
 EHD—L. H. Hoeger, 59 Landsdowne Rd., South
 Perth
 VK2DM—W. S. Morrison, 20 Main Rd., Moosnah

FEDERAL QSL BUREAU RAY JONES (VK3RJ), MANAGER

An interesting visitor to the July meeting of the Victorian Division was Lt. Terry Madden, ex VJCF who is being remembered in Australia with a view to settling in this country. Terry, when called upon to relate some of his Ham experiences in India, modestly declared that apart from running a

15 watt transmitter with which he kept sketchy with "Burma and Tibet," he had little else to relate.

Another interesting visitor to the meeting and to as many Ham shacks as his stay in Melbourne permitted was David (VK2JA) who had been in the GTH. David is on his way to New Zealand on the "Athens" and intends settling in NZ and doubling his money. We will hear the pleasure of a contact with him under his ZL call sign. The writer got quite a thrill when David produced writer's QSL cards for contacts in 1932 and 1933. David was also able to give first hand and authentic information on the current food situation in Great Britain.

A card from a little known country recently came to hand. It was from PX1A in Andorra which the card describes as "almost a free republic between France and Spain." We can see the pleasure of the sole Ham in Andorra. Any other FX stations heard are pirates" and solicits QSLs to go via Box 273, Chihuahua, Mexico.

John Green (VK2VJ) who is getting more than his share of current DX, had the misfortune to have his pole and antenna carried away by the gales that beset our oldest State during the end of June. A card to hand from the expedition "Don Vaki" with the call sign shown as VP7MG, "In the beautiful Bahamas," bears the superscription "Yow WANN" but does not state which of the three operators listed on the card was sent the rather call.

Another unusual card is that of HP2CA Portable Marine and bears the information the HP2CA operated on board a former American freighter now registered under the flag of the Republic of Panama, but is not a licensed Panamanian amateur radio station. The card related to a contact when the ship was near Martinique and solicited a QSL care Radio CX1CK, Box 11, Montevideo, Uruguay.

July must have been the month of unusual QSLs as a further card came to hand from LZ1AA, Box #20, Sofia, Bulgaria, stating that the station is the first official LZ amateur station and this contact was his first DX QSO.

QSL traffic via the Federal Bureau for June registered an all time high totalling over 2700 cards. This tally eclipsed the previous record by a couple of hundred cards.

For the benefit of new licensees the QSL set-up in Australia is recapitulated—

Federal Bureau, Box 2611W, Melbourne, or 33 Lindsay Street Box Hill, E.11, Victoria, distributes in bulk to the State Bureaus all overseas cards incoming to Australia and vets cards for W.A.C. and W.R.L. Certificates.

VE2 Bureau: 75 Maloney Street, Eastlake, N.S.W., distributes for New South Wales.
 VK4 Bureau: 36 Felix Street, Wooloowin, N.S. Brisbane, distributes for Queensland.

VE3 Bureau: 8 Brook Street, West Mitcham, S.A., distributes for South Australia.

VE5 Bureau: Box #219, G.P.O., Perth, distributes for Western Australia.

VK7 Bureau: 6 Thirra Street, New Town, Tasmania, distributes for Tasmania.

VK8 Bureau: 20 Lavers Street, Camfield, S.E.S., Victoria distributes for Victoria. Where applicable please see that your State Manager always has a stamped addressed envelope on hand for you. This will help him and you too. Outward bound cards from Victorian Stations should be sent to 130 Thomas Street, Hampton, Vic.

A note to hand from that old-timer Mart Chaffer, owner of many varied call signs and now signing VK3MH discloses that Mart is as keen as ever and is awaiting the completion of a new house in Ballarat. Until then his QTH is care 28A, Ballarat, Victoria.

VK1ZL informs us that in a recent QSO with VP1AA, British Honduras, he asked him to convey to other VKs that they would now receive their outstanding cards from him.

NEW SOUTH WALES

About 100 members attended the general meeting on the 25th June. The chief attraction for the evening was a very attractive and interesting lecture by Mr. J. R. Reed (VK2JR), Chief Engineer of the Transmitter Department at A.W.A. He dealt mainly with the use of varying the frequency of crystal controlled transmitters. He then spoke on feeder lines to aerials, neon lamps as voltage regulators and a 100 watt motor running 107A. Altogether it was a most illuminating evening. Full details are being prepared by Mr. Reed for publication.

During the evening the President announced the election of the Council for 43-49 as follows: President—Mr. M. Meyers (VK2VN), Vice-Presidents—Mr. J. Meale (VK2JL) and Mr. R. F. Trueman (VK2BV); Councilors—Mr. J. Corbett (VK3VC), Mr. O. Hutchinson (VK3YP), Mr. N. MacNaughton (VK3ER) and Mr. A. Thurston (VK3AV); Secretary—Mr. W. L. Vye (VK3XU); Treasurer—Mr. B. Anderson (VK8AD).

After inactivity for about six months VK2AN is building a house at Miranda and will soon be on the air again. 22P, 2ALO and 10Q have been very active in the DX field of late and have made some fine contacts on 14 Mc. 2PH recently visited North Coast Hams during his honeymoon. 22V prefers 800 to beam tubes in his final. 21T is finding conditions poor in early mornings on 14 Mc. 2AIM using C.W. and phone on 7 and 14 Mc.; interested in C.W. rotary. 2PA and 2TA found in the City, visited quite a number of stations. 2TV has new receiver complete with all mod cons. 2AIB has new signal on 7 Mc.; ask him about his DX on 7 Mc. 2BA after solving the receiver design, now has to construct same. 2VQ's new QTH is mainly and hopes to be on soon again. 23J has nice compact equipment; trying phone on 14 Mc. 24W is now at Lindfield and will be working land on 14 Mc. again soon.

2ATH busy at University; folded dipole 90 feet high and 15 watts works the DX on 14 Mc. 24V on all bands, good results from dipoles and Window antenna. 2AM has over 100 countries post-war on

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of materials

Page 16 Amateur Radio; August, 1948

The recent raffle for the Mantel Model Radio Receiver realized the sum of \$841.19, and was won by Miss M. Campbell, c/o T. & G. Building, Malvern, with the No. 27 Communication Kit (Campbell). The Committee wish to thank all those who so ably helped with the sale of tickets, and to those who bought so many tickets. We have no immediate sale plans for the future but in the meantime, keep those donations coming in. Please send any donations through the Zone Office or direct to "Food for the Millions," Box 3011W, G.P.O., Melbourne.

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Editor, "A.B."

I am, in the interest of the W.I.A., suggesting that a position be established for the organization to have an official or a receiving office for all the purposes of rounding up outsiders and "hanger-on's." I do not know if you are aware of the position or not but there is quite a number of non-members who apparently are not getting any thought to the fact that they should become members. During the past year as a result of my enquiries in attending the General, V.E.F., T.A.O., and Receiver Group meetings plus the Hamfest and disposals I have noticed the same persons always in attendance for weeks. They have no rights and they have even obtained disposal gear via members.

The W.I.A. is undoubtedly a union for the Amateurs, therefore being as such we should have an official credit just like one as of a tradesman's union, persons who would reward those people with the object of selling W.I.A. membership. A good member, as you have made this way, why not to a V.O.C. (as you include the W.I.A. membership in the notice. This would be a sure way of getting members as up to now, not all such students have joined up. At present it is hanging fire at the W.I.A. by just making use of it, by the A.O.P., whereas by increasing the fees slightly, all intending students would immediately join the members (as well as members) then on gaining their tickets would be granted full membership with the necessary diploma as to their fees. It is no secret that the boys in the market who are not members at all as they have seen on the air for last twenty years!

If such a position was brought about, I would consider it even the best action a monitor for the Y.F.F. 144 Mc. band for 80 hours each week with the notes in the magazine as well as synopsis of notes at the meetings, and not for

getting the wiring out work for the disposal section or acting as a doorman for our new social nights. In my position if I can find time to do all these jobs then I consider that the other members should fall into line and put their shoulder to the wheel as it seems a shame that your circular should have to appeal for volunteers from many members. In conclusion I do wish you every success in your efforts for a 1948-10 team.

—W. J. HARTLEY
NORTH WESTERN ZONE

Members are reminded that the Zone Convention will take place during the last weekend of August, Saturday and Sunday, 28th and 29th August.

The Convention will be held at the home of Bruce Mann (VK3HJ), Queensland. Bruce's home is about two miles from the town and those attending the Convention should have no trouble in finding it. (His merit can just about be seen from the Editor) Bruce has invited that the town of the very large crowd expected, that it might be wise to bring along some bedding with you for although there appears to be sufficient on hand to cover the multitude, a little extra would not go astray.

Would those who have not yet signified their intention of attending this Convention, and intend to do so, please notify VK3HJ as soon as possible so that he can make suitable arrangements.

CENTRAL WESTERN ZONE

The Central Western Zone Convention will be held at Horsham on Sunday, 13th September, afternoon and evening. It will take the form of a 50 Mc. Five Day during the afternoon, a dinner at night, followed by annual meeting, a technical talk and (we hope) some technical films. The Zone will be pleased to welcome any members of Council who could make the trip or any other Hams who may be interested; 50 Mc. experts would be particularly welcome as this has been the one practical application in the Zone as yet although there is plenty of interest. Any visitors requiring accommodation at Horsham should contact VERA who will be only too happy to arrange it.

BTX is still enjoying the undoubted benefits of the local A.C. supply. The other night the powers that be reversed the poles for the power for half the night. All of Bill's electrolytics violently objected and went up. However he has a few 50 volts between one generator and earth. His battery charging so why worry?

SAREM (just out in the west) has a new transmitter just waiting for his new generator, he will soon be able to give the QRM a real run for

its money. SAREP is tightly hitched with phone, but has not got very far as yet. BIK is busy with Test broadcasts so is not on much, however he had a 10 Mc. wave meter calibrated so should be OK by the time cricket finishes. Remember next Zone book up will be on Sunday 5th August, at 10 a.m. on 7100.

GEELONG BOYS FORM A RADIO CLUB

The Geelong Amateurs decided to form a Radio Club and have named it "The Geelong Amateur Radio Club." A meeting was called and officers/bearers elected. Alex Ball (VK3ABZ) was elected President; Jack Marlowe (VE3AV) and Ed Kowack (VK3AG), Vice-Presidents; Bob Wooley (VK3IC), Secretary; Alf Hower (VK3AJF), Treasurer. The Committee are Bill Brownhill (VK3BU), Archie Brown (VK3BW), Bruce Gossie (VK3VF) and Phil Greig (VK3APG). Fred Freeman (VK3ALD) was elected QSL Manager and Press Correspondent.

The first general meeting was held on 13th June and was well attended by short wave listeners and Hams. A Type 1 Mark 8 transmitter and a Type 4 were demonstrated by SAREP and SAREM. The club has planned to conduct field days, have lectures and demonstrate equipment, etc., also to meet for a club week and to help building the Zone.

EMERGENCY ZONE

The W.I.A. Emergency Network was brought to the fore page news, when ELS with their Eastern Zone station, SSS, SAHK and SAJL, all operating on 6084 Kc., played a big part in the locating of a boy who had strayed while his father was cutting wood in the heavily timbered country near Traralgon. SSS and SAJL with portables went with the searchers and kept in communication with SAHK who was operating his home station and relaying messages to SIS who was in turn in touch with Emerald Street.

W.E. has become the grand father of a brand new junior op., congrats Bill! SQZ's business curses him far and wide but Graham usually manages to return home on the week-end. SFR has, as he looked building a community and by reports is working extra well Ron is anxiously awaiting the a.c. which he hopes to have soon. SGI has been doing quite a lot of experimenting with beams, and has managed to put out a 50 signal on 60 Mc. from his home location. SGL and SIF are doing quite a lot of re-building, the last job being a complete new 50 Mc. transmitter and reports are very encouraging, both stations were operating on the 50 Mc. field day, one portable and the other from the home location.

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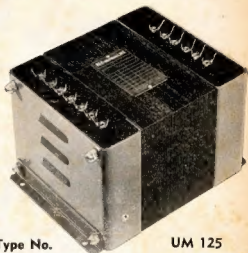
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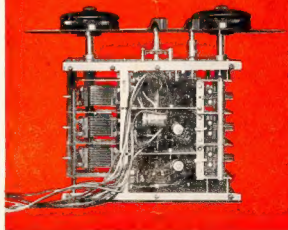
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